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Mark Masselli: This is Conversation on Health Care. I am Mark Masselli.

Margaret Flinter: And I am Margaret Flinter.

Mark Masselli: Well Margaret as we look around the country we are starting to see some more promising signs around the online insurance market places according to some independent analysis there's been a dramatic decrease in the number of errors on the backend at the Healthcare.gov website.

Margaret Flinter: Well, Mark I can help thinking about one of old favorite Beta Science it's getting better all the time and think it's going to take just a little more time and we have a few days left. Folks who want to be covered by the first of the year of 2014 have just a short time, the deadline for signing up for coverage is December 23rd.

Mark Masselli: And Margaret while the news is generally being good regarding the State Base Exchanges, there are still some problems to iron out but the good news n we say it each day as we've being doing enrolment, people are coming in to learn more about their insurance opportunities and for the most part I think they walk away with the smile on their face.

Margaret Flinter: And, you know, there is some similarity to what happened back with the role of Medicare party which of course has really been widely successful in most people's eye so remember back then Senior (inaudible 1:12) they completed the application, might have still been some conclusion but I believe if they had enrolled that was honored on the start dates of – we expect we'll see that happen.

Mark Masselli: And we'll keep rising the price which is to make sure that millions of uninsured Americans gain coverage.

Margaret Flinter: Well, that December 23rd end date brings us right up to it will be the anniversary on December 24th of the third year since the Affordable Care Act was passed by Congress and of course speaking of the holidays we have a little bit of a treat for our listeners, a little something differently we've never featured a young precollege person on the show but we've come across very remarkable young man who we think is poised to do some amazing things with his scientific curiosity.

Mark Masselli: Jack Andraka has been gaining global attention since winning last year Intel Science and Engineering Award for a device he created that can diagnose early stage pancreatic cancer. He's been an African guest at the White House, he was awarded by the Vatican, he has been describe this as the prodigy of pancreatic cancer by Smithsonian and is the only teen to have been invited to speak at the Royal College of Physicians.

Margaret Flinter: And he began this ground breaking career and research when he was 13, he is all of 16 years old now and making waves in scientific circles, very exciting to see what a young scientist is able to accomplish, sum up with the help of the internet, but really with a giant dose of discipline and curiosity.

Mark Masselli: Lori Robertson, Managing Editor FactCheck.org will be stopping by to shine a spot light on misstatement about the health policy.

Margaret Flinter: And no matter what the topic you can hear all of our shows by Googling CHCRadio.

Mark Masselli: And as always, if you have comments, please contact us at CHCRadio.com or find us on Facebook or Twitter, we'd love hearing from you.

Margaret Flinter: We'll get to our interview with Jack Andraka in just a moment.

Mark Masselli: But, first here's is our producer Marianne O'Hare with this week's Headline News

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Marianne O'Hare: I'm Marianne O'Hare, with these Health Care headlines. Business is picking up at Heathcare.gov and there are been some notable changes since the recalibration and overhaul at the site, namely it's functioning. CMS official saying the site is easily handling a million visits or more a day and there's another significant change that was criticized in the original design, folks can now shop online for plans before having to commit all their information to the site making for more user friendly experience according to consumer reports which has been monitoring the exchanges. Meanwhile there are still some problems erupting on some of the state's exchanges, Maryland's Exchange Director quit over (inaudible 3:51) with that site, then the centers of Medicare and Medicaid washing a challenging roll out the federal exchange has decided to give medical practices more time to adopt to another deadline pushing the stage two meaningful use requirements for health IT up to 2016 and stage three to 2017. The extension is meant to give more time to focus efforts on enhanced patient engagement, interoperability and health information exchange as well. And many stake holders n others have called for stage two implementation to be delayed including the American Medical Association, American Hospitals Association and American Academy of family physicians and a decision has been made in Connecticut, a judge has temporarily block United Health Care from being allowed to drop 2200 physicians from its Medicare Advantage Plan in several Connecticut based medical societies filed sued against the insurers and it would deliberately compromise care being delivered to seniors who are in their patient population. Ohio and New York are considering a similar action, United Health Care says it will fight the decision. I am Marianne O Hare with this Health Care Headlines.

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Mark Masselli: We are speaking today with Jack Andraka, 16 year old inventor scientist and cancer researcher, he is the recipient of the 2012 Gordon E. Moore Award, grand price of the Intel International Science and Engineering Fair for his work in developing a new method to detect early stage pancreatic and other cancers. Mr. Andraka has won the first youth achievement, Smithsonian American Ingenuity Award for his breakthrough work as well as the White House distinction for

promoting open science. This Maryland High School junior has been called the teen prodigy of pancreatic cancer by the Smithsonian Institute. Jack welcome to Conversations on Health Care.

Jack Andraka: Hey, great to be here.

Interviewer: You have created what's are being describe as a potential game changer in detecting early stage pancreatic ovarian, lung and other hard to detect cancers and your research began at the age of 13 and by age 15 you created the simple device that's earned you so much international claim, a dipstick with nanotube fibers that detect proteins present in early stage pancreatic cancer and it's being described as both simple and elegant by scientist with far more extensive training and experience. So tell our listeners how you decided to tackle something that has eluded cancer researcher for decades and where did you get the idea that lead to the creation of this device?

Jack Andraka: So I become in interested in pancreatic cancer when I was 13, when a close family friend who is like an uncle to me actually passed away from the cancer and when I dug a bit deeper on the internet I found that 85% of all pancreatic cancer patients are diagnosed at late stage, when they have less than 2% chance of survival and then I realize that out current method detection is six years old and cost \$800 and grossing **(6:50 Inaudible)** missing 30% of all pancreatic cancer. And so after months and months of just researching all these different topics as in Google Wikipedia, I timely had this breakthrough in my high school biology class where I was reading an article, American's Single-Walled Carbon Nanotube and those are long term pipes of carbon **(7:10 Inaudible)** so they are very, very small and they have these amazing properties and they are kind of like the superhero of the material science. So I was reading this article and their properties, well we're learning what I antibodies, molecules are only reacted to one specific protein, in this case a cancer biomarker that's found in your blood stream when you have these different cancers and they thought maybe if I combine these two concepts then I will get something cooler that because essentially you have a network that would only react to one specific protein but would also change the logical properties based on the amount of protein present and I thought that could indicate the presence of pancreatic cancer that change in electrical properties.

Margaret Flinter: Well Jack I think you have called this approach to research your combination of insatiable curiosity and maybe some youthful optimism but I'm really curious, you referenced your high school biology class I think that you are in and I when you look at your education, when you look at the setting and the way American education set up for science right now, what is your epiphany teacher about how we can train the next generation of scientists, it's sounds like you had some pretty good resources and mentors and support there in pursuing your own creative scientific inquiry?

Jack Andraka: So up until I got into the lab, all of my procedure was made on – all of my ideas were my own and so but I really think that we should allow kids to do more hands on activities designed on experiment. Science fair is a great step in the right direction but I think we should really integrate that into our classrooms a lot more because science isn't just being a regurgitation of facts, it's about exploring and like

fast line your curiosity. And I think by showing kids that, that's what really is then we'll have a lot more interest in the field.

Mark Masselli: You know Jack at the health Centre we have a saying that we're sort of thing at the garage phase of innovation but actually you conducted most of your research since early childhood in your parent kitchen. Then you will later got into the basement where you and your brother were send after some pretty risky experiments were conducted and I believe once any rule, it's your home, maybe your mom's or your dad's says don't burn down the house, you knew this cancer detection experiment needed to be conducted though in legitimate labs if you are going to be able to take it to the phase. So tell our listeners how, how you win about finding a reputable lab that would work with you to explore sort of your untested scientific theories and the sort of rejections that you experience and ultimately the collaboration that you came upon?

Jack Andraka: So once I got this idea in my bio class, I essentially wrote up 32 page – document, outlined my procedure, data like everything and then emailed it actually to 200 different professors at John Hopkins University and the National Institute of Health and I got this email from going to the entire faculty directory and finding peoples who research interest were pancreatic cancers so I sent out those 200 emails asking if I cud work in their lab and I got a 199 rejections and finally I got in to one lab, I got – a maybe from Dr. Anuran Maître of John Hopkins University. Essentially he said okay you can come in for a short interview so I go in and an hour later after getting furiously interrogated by him and his postdoctoral students, I finally got the lab says (10:42inaudible) then I could start doing work and then seven months later I came up with this one small paper (10:49inaudible) that cost three cents and take 5 minutes to run.

Margaret Flintner: So Jack for sure you have made an incredible discovery, innovation for all of us who are clinicians that have seen the tragedy of late stage diagnoses of ovarian and pancreatic cancer. Obviously the benefit is huge. But to get in to mainstream clinical practices to be considered from inclusion on the US Preventive Services Taskforce or to be consider the gold standard for screening as you know is another whole discipline in some ways, maybe you could tell us little bit about your journey since making the hard science breakthrough, what's the path to actually bringing it to fruition in the world of people in health care?

Jack Andraka: So currently how we are going about this is I have this the international patent on the technology and I am in talks with several large biotech companies about getting it out in market as soon as possible and essentially what is going to be happening is we are going to be licensing it to one of those companies hopefully and then they we'll take it to the market and how it's really going to play out in the regulatory process is we are probably going to register it as a medical device because that's a much shorter approval process than say like a drug for example. Drugs take forever to get through the regulatory process while these medical devices can take as short as 2 years however with mine it'll probably be at least 5 to 10 years before we see it on the market.

Mark Masselli: We are speaking today with Jack Andraka, 16 year old inventor, scientist and Cancer researcher. He is recipient of the 2012 Gordon E. Moore

Award, the grand prize of the Intel International Science and Engineering Fair for his work in developing a new rapid and inexpensive method for detecting early stage pancreatic, ovarian and lung cancer. Mr. Andraka is also leading the only teen team entering in the \$10 million Qualcomm Tricorder X PRIZE competition seeking to develop wireless diagnostic technologies that will put health care monitoring power in the consumer's hands. So Jack, tell us a little bit about your team, you are up against 300 well-funded scientific teams to win the X PRIZE competition. So we would love to hear more about your team it's called Gen Z, I think it is and in your approach to this challenge and what sort of advantages have growing up with technologies digital data have given your team over researchers that who found their skills before the advent of the internet. Do you think it's going to give you an edge on it or all hands on deck, it's going to be a very tough competition?

Jack Andraka: Well of course it's going to be a tough competition there, 300 of the best and brightest teams from around the world competing for this \$10 million prize. However I think my team has a really good chance about getting in to the finals and so my team is constructed of all teenagers and we're from all over the world and right now we have 5 team members and we are currently refining all technologies and so I think really that our advantage that my team has comes from the fact that we all are teens and we grew up with those technology but also because we are young, we really haven't been kind of pigeon holding to a certain way of thinking because when you stay in a field for a bit too long, you might begin to start thinking in this one certain way and outsiders look at a problem can often lead to great solutions I mean like when I began this project I had no clue what a pancreas was? And I was able to develop a new way to detect pancreatic cancer and that's why I really think that my team has going for, we don't have any degrees and we really have no formal education in this field however we are going to give it a shot and see what we can do.

Mark Masselli: Do you have a website that people can follow you at – on that?

Jack Andraka: So right now we are trying to create website however you can follow me at @Jackandraka on Twitter to get updates on it, as well as my Facebook page Jack Andraka.

Margaret Flinter: You said that your accomplishment was really no big deal. There's millions of potentially ground breaking innovators and scientists around the world who are ready to make similar breakthroughs if they only had access to open source scientific papers. Now, I don't know if you are speaking of the experience that many of us who do research have had if you read an incredible abstract that you found in PubMed and you go looking for the full article only to find out its proprietary and there's a \$45 fee or \$50 fee which certainly when you are looking at hundreds of articles can add up and you noted that your quest for search data was really cost prohibited for you and revealed the presence of a scientific data aristocracy. What did you mean by that and as you think about creating the future for yourself and others as scientist? What would you like to see done about that?

Jack Andraka: Yeah, so over the course of this process, that's one of the greatest adversities was actually these scientific papers because you see I am 15 years old, I don't have that much money so it was really hard to get access to a lot of the articles

I needed and because of that inhibitive cost, it really prevented me from doing some of the research that I really needed to do. And I think this is all true for pretty much all young scientists is that we simply don't have the money to afford these articles. So, really we've kind of created this barrier between the youth and science because a (Inaudible 16:13) is 99 cents but some of the science articles are \$35, we see all these big some initiative but when that's there I mean that's a bit of mixed message as our priorities because I think that by opening scientific data, this will really help everyone because recently Harvard's dated, well we simply can't afford continuing a lot of our subscriptions because they have become so expensive. And that's going to inhibit a lot of life saving and potentially ground breaking research and I don't think that we should segregate research because ideas don't discriminate who they come to so why should we discriminate who we're giving knowledge to.

Mark Masselli: Wondering, you know as a 15 year old how do you make things more accessible in the science world but for some people they are just trying to find the door handle? So, what are some advices that you might give to your brothers of your age, the Gen Z crowd in terms of ways to start thinking about science or get engage?

Jack Andraka: I think the best way to really get interested into science is get hands on so just do some experiments. I mean they are actually really fun because science isn't about coming up with lifesaving treatments and stuff, that's a by-product of science but science is really satisfying your curiosity. And you never know the result of a science big experiment, you just trying to see if your hypothesis will be true. And some of the great scientist discoveries have been found when your hypothesis has actually false. So, I think that by realizing that's okay to fail in science and that by just starting to do scientific experiments people will really begin to see that science is a lot more fun than a lot of the public thinks that it is.

Margaret Flinter: Well Jack I think one of the fun, exciting, rewarding elements of making breakthroughs is that you get to then begin to build upon that work and to pull the thread, go back. So, I am curious where would you think your work will take you as you think about this, does it lead you to want to go further upstream in terms of genetics or prevention even earlier detection, does it make you want to go further downstream to better treatment modalities, where do you see yourself continuing to do your work?

Jack Andraka: So, currently I'm just focusing on the Tricorder X PRIZE and in terms of my future plans I really have no clue what I'm going to do when I grow up and so it's all open questions for me but I guess I have a bit time to decide.

Mark Masselli: We have been speaking today with Jack Andraka, 16 year old inventor, scientist and cancer researcher, recipient of the 2012 Gordon E. Moore Award, grand prize of the Intel International Science and Engineering Fair for his work in developing a new rapid and inexpensive method for detecting early stage pancreatic cancer. You can learn more about his work by going to jackandraka.net that's andraka.net. Jack looking forward to more of your success and thank you so much for joining us today on Conversations on Health Care.

Jack Andraka: Thanks for having me.

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Mark Masselli: At conversations on health care we want our audience to be truly in the know when it comes to the facts about health care reform and policy. Lori Robertson is an award winning journalist and Managing Editor of FactCheck.org, a nonpartisan, non-profit consumer advocate for voters that aim to reduce the level of deception in US politics. Lori what have you got for us this week?

Lori Robertson: Well, several readers have asked us whether the Affordable Care Act restricts insurance coverage of Mammography. The answer is no. In fact, the law requires insurers to cover mammograms without any cost sharing, every one to two years for women starting at age 40, for women with Medicare the law increased coverage. Medicare now fully pay a three yearly mammograms starting at age 40. Despite what some of our readers may have heard, there is not cut off or upper age limit for mammograms to be covered through Medicare. We called the American Cancer Society, the nonprofit Medicaid Rights Center and the American Geriatric Society and none had heard of any issues or complaints of seniors being denied mammograms. At least, some of the claims are misinterpretations of 2009 recommendations from the US Preventive Services Taskforce. The Taskforce is a volunteer panel of primary care physicians and preventive medicine experts. They may be controversial recommendation that by any old mammography screening should begin at age 50. For women younger than 50 the panel said that decision to have a mammogram was an individual choice. For women 75 and older the panel said evidence wasn't available to determine benefits versus harms. The panel did not say that women under 50 or over 50 shouldn't get mammograms at all. The 2009 recommendation were rejected by some cancer groups and they were specifically rejected by the Affordable Care Act which again requires full coverage of mammograms as a Standard Preventive Benefit starting at age 40. And that's my FactCheck for this week. I am Lori Robertson, Managing Editor of FactCheck.org

Margaret Flinter: FactCheck.org is committed to factual accuracy from the country's major political players and is a project of Annenberg Public Policy Centre at the University of Pennsylvania. If you have a fact that you'd like to check email us at CHCRRadio.com, we'll have FactCheck.org's Lori Robertson check it out for you here on Conversations on Health Care.

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Margaret Flinter: Each week conversation highlights a bright idea about how to make wellness a part of our communities and everyday lives. Smoking continues to be the number one preventable cause of premature death in this country, leading to over 440,000 deaths per year and while quitting remains a challenge to most smokers, the Tobacco Industry continues to spend billions of dollars of promotion in law being. A new study released by the International Tobacco Control Policy Evaluation Project shows that putting graphic warning label on the outside of cigarette packs leads to significant reduction in the number of smokers.

Dr. Jeffrey Fong: In the late 90s there was concerted efforts to really put the graphic images of what it's really like to get a smoking related disease, on to warning labels.

Margaret Flinter: Dr. Jeffrey Fong of the University of Waterloo in Canada conducted the study, analyzing Canada smoking cessation rates from the year 2000, when Canada began ordering that a third of the cigarette pack be reserved for graphic images of diseased, hurts, and blacken lungs through 2009. The data showed a mark decrease in the number of smokers during that time, attributed largely to the presence of the graphic images in conjunction with strict smoking laws.

Dr. Jeffrey Fong: We examined the period of time in Canada, a nine years four of the graphic warning labels came out and then compared it to the nine afterwards and what we found was there was a sharp decline in the smoking rates after the one in labels compared to before and we compared it to that same period of time in the United States and it showed that the decline in smoking rates after the warning labels in Canada were much greater than for that same period of time in Untied States where there was no change.

Margaret Flinter: Dr. Fong noted that when the FDA was given a directive to initiate policies that would lead to decreased smoking rates, it was given inconclusive data on the effectiveness of the use of such graphic images on cigarettes sold in America. So, the practice was not initiated here and he thinks that was a missed opportunity. Based on the Canadian number Fong and his college estimate that a similar program in the US would leads you a dramatic reduction in the number of smokers here as has been shown in Canada and the other countries around the world who've initiated the similar practice.

Dr. Jeffrey Fong: In 2012 the smoking rates was about 23% in United States and so, if you reduce that percentage by 12 and 20 % you get between 5.3 and 8.6 million fewer smokers in United Stated if they were to apply graphic warning labels of the type that Canada put out.

Margaret Flinter: Placing graphic images of body parts that have been damaged diseased by smoking providing a visual to turn into regular smokers and to graphic visual warning to young people considering smoking, something that could be potentially lead a millions of Americans quitting and very likely prolonging their lives, now that's a bright idea.

Margaret Flinter: This is Conversations on Health Care. I'm Margaret Flinter.

Mark Masselli: And I am Mark Masselli, peace and health.

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